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Polaroid Premieres Polavision









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FOR RELEASE ON RECEIPT

"THE SECOND REVOLUTION IN PHOTOGRAPHY"

FULL-COLOR MOVIES IN SECONDS--

POLAROID CANADA PREMIERES POLAVISION

TORONTO--May 12, 1978 --Polaroid Polavision -- the unique new instant movie system which has been called "the second revolution in photography" -- was introduced here today by Polaroid Corporation of Canada Limited.

Polavision allows full-color movies to be viewed seconds after they have been taken.

Described as making "ultimate snapshots," the Polavision system utilizes a host of technologies developed by Polaroid during its 30-year experience in pioneering and marketing the Polaroid Land system of instant "still" photography.

Conceived to eliminate the technical complexities, delays, and relatively inconvenient projection equipment involved in making and screening conventional amateur movies, Polavision includes a simple-to-use super-8mm movie camera, a cassette of instantly-developing color motion picture ribbon, called Phototape, and a compact electrically-powered Player which processes and plays back vivid full-color moving images in seconds.

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The revolutionary Phototape ribbon is exposed, processed, viewed, and rewound without ever leaving its cassette. The user simply slips the cassette into the Polavision Land camera, records the action and puts the exposed cassette into the Polavision Player. The Phototape is developed automatically and, in 90 seconds, permanent, high-quality moving pictures appear in brilliant color on the Player's built-in 12-inch (30cm) screen. After screening, the 2 minute 35-second Phototape automatically rewinds in the Player and is ejected, ready for instantaneous replay.

A series of optical and mechanical signals in the Phototape cassette "instructs" the Polavision Player to provide fully automatic operation throughout the Phototape development and screening process, including switching the Player on and off at the start and finish of the sequence.

An instant replay control provides fraction-of-a-second response to Polavision users wishing to enjoy multiple replays of specific scenes.

Suggested list prices for the Polaroid Polavision instant movie system are \$275 for the camera, \$620 for the Player, and \$13.95 for each Phototape cassette. The instant replay control has a suggested list price of \$51.95. The cross-Canada availability of Polavision is slated for early June.

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POLAVISION LAND CAMERA

SPECIFICATIONS

- Film: Polaroid Polavision Phototape Land Cassette -- Type 608 instant developing color movie film.
- Lens: 8-element, 12.5-25mm, f/1.8, precision glass optics, coated and color corrected.
- Zoom Ratio: 2:1
- Zoom Control: Manual. Lever on lens bezel adjustable to right and left-handed use. Only $\frac{1}{4}$ turn of bezel between wide angle and telephoto positions.
- Focusing: Two-zone focus. Near -- 6 feet to 15 feet (2-5 meters); 15 feet to infinity (5 meters). Lens bezel moves in and out to select zone.
- Viewfinder: Reflex. Focus setting displayed. Indicator light shows beginning, 6 seconds before end, and end of film. Minimum and maximum aperture indicators.
- Eyepiece: Flexible rubber eyecup. Adjustable eyepiece (+3 diopters).
- Exposure Control: Cadmium sulfide (CdS) automatic electric eye. Built-in Type 85 conversion filter (5500-3400⁰ Kelvin) for daylight filming.
- Aperture Range: Continuous adjustment from f/1.8 to f/22 automatically selected by exposure control.
- Filming Speed: 18 frames per second.
- ASA Capability: 16 to 500 ASA
- Power Source: 4AA alkaline 1.5 volt batteries located in pistol grip handle.
- Diminsions and Weight: 7" x 8" x 2" (18 x 20 x 5cm). 26.5 ounces (750 grams).
- Other Features: Battery test button; film-usage indicator; grip-switch, activating power; wrist strap, tripod socket. Easy, color-coded loading.
- Accessories: 170-watt "Twilight" for indoor filming; carrying case.

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POLAVISION LAND PLAYER

SPECIFICATIONS

Functions:	Automatic processing of Phototape ribbon in cassette, automatic projection of movie, rewind and ejection of cassette.
Size:	11.5" x 11.5" x 17" (29.5 x 29.5 x 43cm)
Weight:	24 lbs. (10.8 kilograms)
Screen Size:	12" diagonal (30cm). 9.5: wide x 7"high (24 x 18 cm)
Lamp:	150 watt quartz - halogen.
Lens:	f/1.2, 7.6mm 7-element glass
Screen Material:	Molded plastic screen incorporating two optical surfaces -- a rear Fresnel and a front diffuser. A special optical coating is applied to the Fresnel to optimize contrast and light distribution.
Controls:	The Player has no transport controls. All functions are handled automatically. Only controls are: focusing knob, framing knob, and eject button.
Other Features:	Two built-in fans to cool lamp and film; electronic logic circuitry to detect cassette condition (processed or unprocessed) and to supply logical functions: AC motor to power fans, claw and mechanical logic; DC motor to power film transport system.
Accessories:	Instant Replay control.

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POLAVISION PHOTOTAPE CASSETTE

SPECIFICATIONS

Length of Phototape:	Approximately 40 feet (11.8 meters)
Width:	8mm
Number of Frames:	2,790
Frame area:	6.3 x 3.2mm
Exposure/Replay Speed:	18 frames per second
Running Time:	2 minutes 35 seconds
Phototape Base:	Polyester
Color Temperature Balance:	3400 ⁰ Kelvin
Cassette Size:	2 3/4" x 5 1/8" (70 x 132 x 7.5mm)
Weight:	3 ounces (84 grams)
User Signals:	Printed indicators -- "Unexposed," "Exposed," "Rerun" appear in cassette aperture to signal Phototape mode. Color-coded write-on labels to guide loading into camera and Player, and for titling.
Functional Signals:	Phototape incorporates a series of cut- outs to generate red indicator lights in camera. At the end of exposure, cutout perforations prevent further movement of Phototape within camera. Electrical contacts on the cassette enable Player to sense Phototape as processed or unprocessed, and implement the appropriate logic sequences. A photocell signal hole activates instant high-speed rewind and cassette-ejection sequence after Phototape is played.

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POLAROID POLAVISION: FROM FANTASY TO REALITY

Not long ago, the idea of instant movies was pure fantasy. But fantasy gradually changed to reality over more than a decade of research, experimentation, and refinement. The creation of the Polaroid Polavision process brought together the varied disciplines of photochemistry, optics, electronics, electrical mechanics and plastic molding to create a system of ultimate simplicity -- belying its technological sophistication.

The challenge, reminiscent of that which resulted in the 1972 introduction of true one-step still photography --the Polaroid SX-70 system -- was to create instant cinematography without recourse to the costly and relatively inconvenient traditional motion picture technologies. The system would have to eliminate the technical complexities, delays, and multiple-unit projection equipment involved in making and screening conventional amateur movie films.

The answer lay in the invention of a 40-foot (12 meter) ribbon of infinite photographic possibility -- the unique Phototape which, self-contained in a palm-size plastic cassette, operates much like a mini-computer in directing the intricacies of the system, as well as recording moving images -- leaving the photographer free to create.

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THE PHOTOTAPE CASSETTE

The Phototape cassette, weighing only three ounces (84 grams), eliminates the handling, processing and delay associated with conventional movies. On the Phototape are 2,790 "live" frames, each with an image area of 6.3 x 3.2mm. The Phototape itself contains all the signal keys which control the operation of the camera and Player.

During the design of the unprecedented Phototape cassette, Polaroid scientists and engineers developed components and technologies that had previously been considered unattainable and which are unique to the Polavision system.

These components, with such intriguing labels as "snubber," "bobulator" and "milk-bottle trap" led researchers to the creation of plastic components molded and manufactured to unheard-of tolerances. A molded plastic nozzle, through which developing reagent is spread along the Phototape at speeds of up to six feet (two meters) per second and to a precise depth of 1/100th of a millimeter required tolerances of $\pm 1/1000$ th millimeter, unprecedented in mass production plastic molding technologies.

In the Polavision camera, the Phototape cassette pre-determines the initial setting of the camera's automatic exposure control circuit. During exposure, the Phototape ribbon, by means of a series of almost imperceptible indentations along one edge of the tape, allows a pressure switch in the camera to generate a red indicator light which appears in the camera viewfinder to advise the user of "start of film", "six seconds of live film left", and "filming completed." Associated with the "filming completed" signal is a cut-out which prevents further movement of the Phototape by the camera's transport claw.

Placing a Phototape cassette into the slot on top of the Player automatically switches the Player on. Electrical contacts on the cassette, short-circuited until the cassette is processed, "instruct" the Player to commence the appropriate sequence of electronically-controlled actions required to either process or project the Phototape.

PHOTOTAPE DEVELOPMENT

When the Polavision Player senses that the "processing" sequence is required, it determines, by attempting to engage the Phototape perforations and transport the film, that the Phototape has been completely exposed. Provided that the camera user had recorded to the end, the Phototape reached a position at which a mylar "arrowhead" tab in the cassette automatically engaged a "milk-bottle trap" -- a cut-out shaped like a glass milk-bottle -- in the end of the Phototape ribbon. Attached to the "arrowhead" tab is a foil sealing a plastic pod of developing reagent.

The Player process sequence begins with a $\frac{1}{2}$ -second rewind motion to pull the engaged arrowhead with the Phototape back on to the supply reel in the cassette, automatically allowing developer reagent to flow down towards the applicator nozzle held in intimate contact with the Phototape. After a pause of two seconds to allow a build-up of reagent at the nozzle, the Player then continues to rewind for about 28 seconds at varying controlled speeds of up to six feet (two meters) per second so that the 12 tiny drops of viscous developer reagent are meticulously and evenly distributed along the entire length of the Phototape. Raised rails along either side of the Phototape image areas prevent the reagent sticking to the back of tape wound on the supply reel.

As the process-rewind sequence reaches completion, cut-outs on both edges of the Phototape automatically engage the prongs of a metal wedge which forms a bridge to short-circuit the electrical contacts on the cassette. The wedge is pulled along by the Phototape and opens the circuit to inform the Player that processing is completed, except for a 45-second electronically-controlled pause to allow full development of the Phototape. The movement of the wedge also positions it beneath the nozzle, permanently sealing it with a chemically-treated pad to prevent escape of any residual developing reagent. The wedge also forces open the pressure pad which had held the Phototape in intimate contact with the nozzle so that the Phototape can now move freely during subsequent "playing."

PLAYING THE PHOTOTAPE

When the electronics in the Player senses the open contacts of a processed cassette, it determines the start of the Player's project sequence and the Phototape begins to move forward at 18 frames per second -- the same speed at which it was originally exposed in the camera. An electronically-controlled delay switches on the Player's 150-watt lamp as the first images reach the aperture. At the end of playing, the Player responds instantaneously to a small cut-out near the edge of the tape which allows a flash of light to fall on a photocell in the Player. The illuminated photocell initiates the immediate high-speed rewind of the Phototape, simultaneously switching off the projection lamp.

At the end of the 12-second rewind, the Phototape is stopped in 1/10th of a second by an inertial switch. Both drive shafts disengage, lifters eject the cassette, and the Player is switched completely off.

THE POLAVISION CAMERA

In designing the Polavision system, Polaroid developed a camera that fulfills the credo and philosophy of all Polaroid instant photographic products: that technology should not stand between the photographer and his subject -- freeing the photographer to concentrate on the "taking," not the "making" of pictures.

Once a Phototape cassette is slipped into the camera -- both cassette and camera are color-coded to aid correct loading - the photographer is ready to take movies.

Like all movies, a Polavision instant movie is a series of still images, photographed one-at-a-time as the 1/40th second shutter opens and closes 18 times a second to expose each of the 2,790 "live" frames of Phototape.

After each exposure, a "claw," powered by an electric motor, engages one perforation at the edge of the Phototape to pull the next frame into the aperture gate. The shutter is driven by the camera motor and automatic exposure is controlled through a servo-loop by the electric eye. Apertures range from f/1.8 to f/22, with a square flag indicator showing in the viewfinder when the maximum aperture is being used. A rounded flag indicator shows filming at minimum aperture.

Since Phototape is balanced to 3400 degrees Kelvin for correct color rendition when filming under tungsten lights, a Type 85 conversion filter rests in the camera light path for outdoor filming. For indoor filming with artificial lighting, a socket on top of the camera accepts a small screw-in knob or the accessory Twi Light to remove the filter.

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The camera has a standard tripod socket at the bottom of the pistol-grip handle. Four AA-size batteries in the handle provide sufficient power for 40 cassettes, or one year's filming, whichever comes first. A wrist-strap screws into the tripod socket for convenient hand-carrying.

The Polavision camera lens has eight glass elements, of which the front four comprise an afocal zoom lens with a 2:1 ratio from a wide angle of 24 degrees horizontal to a telephoto of 12 degrees. The focal length zooms from 12.5mm at wide angle to 25mm telephoto.

The zoom is controlled manually by a lever which can be attached to either side of the lens barrel for left-handed or right-handed users and which allows the barrel to rotate 90 degrees from maximum wide angle to maximum telephoto.

The zoom lever also adjusts the lens barrel to a forward or back position to select two focusing ranges -- from 6 to 15 feet (2-5 meters) in the "near" range, with the point of sharp focus at 10 feet (3 meters) from 15 feet (5 meters) to infinity in the "far" setting, with the point of sharp focus at 25 feet (7.6 meters).

As light enters the electric eye lens, located above the camera lens, it falls on a sensitive CdS photocell, generating a voltage varying with the light level. An amplifier in the servo-loop circuit controlled by the photocell powers a small galvanometer linked to the aperture blades immediately behind the four-element zoom lens and the electric eye lens. Rather like scissors, the aperture blades open and close across the electric eye to maintain the constant voltage required by the amplifier, and move correspondingly in the camera light path to control the amount of light admitted to the Phototape.

The camera handgrip has two switches. At the rear is a safety switch which is activated naturally when holding the camera and which switches on the exposure control circuit so that the aperture blades move to the position dictated by the electric eye before filming starts. The safety switch also activates a switch to provide power to the film drive motor once the film trigger is squeezed.

The bright viewfinder displays an aerial image that can be adjusted with a ± 3 diopter eyepiece to match the photographer's eye. The aerial image is generated from a minute mirror projecting into the light path behind the zoom lens. The viewfinder also displays the focus setting below the scene, and contains the red indicator lamp which signals "start of film" alert, the "six seconds of live film left" warning, and the "film completed" continuous red signal.

THE POLAVISION PLAYER

The elegant portable Polavision Player is an electronic marvel which, like the entire Polavision system, hides its advanced technological sophistication under operational simplicity.

Accepting signals from the Phototape and translating them into^o electrical, mechanical and electronic actions, it moves the Phototape at several prescribed speeds for precise times, automatically reverses, stops on cue, engages and disengages drive shafts, automatically accepts and ejects a cassette, switches itself and its lamp on and off, moves the film, moves a shutter, switches cooling fans on and off, and projects bright, sharp color images to the viewer -- all beneath a sleek contemporary-styled cover.

The Player, weighing 24 pounds (10.8 kilograms), contains two motors. A 12-volt DC motor drives the take-up and supply reels of the Phototape cassette. An AC motor with a belt drive system powers the tape advance mechanism, the shutter, two blower systems for cooling the lamp, lamp housing, cassette, motor, and the logic disc.

During the project sequence, the Player controls the movement of the Phototape at the 18-frames-per-second speed at which it was originally exposed. The three-bladed shutter in the Player effectively displays the Phototape at 54 images per second by causing three shutter openings and closings for each frame, to assure flicker-free movement.

Just as the Phototape acts as the "brains" of the Polavision system, the Player's logic disc acts as the "heart." Controlled by signals from the Phototape and powered through a system of gears and clutch by the AC motor, the logic disc is mounted with a series of cams which open and close switches or set mechanical linkages to generate all the Player's inter-related electronic, electrical and mechanical actions.

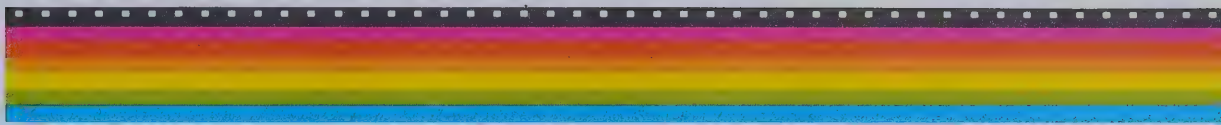
The Player's optical system focuses the light from the projection lamp's reflector into a concentrated beam which enters the side of the Phototape cassette and is deflected 90 degrees by a built-in mirrored prism. The beam passes through the Phototape and the Player's shutter and is focused by a seven-element wide angle projection lens (f/1.2 aperture, 7.6mm focal length). The focused images fall on to a surface mirror which reflects the pictures to the inner Fresnel surface of the Player screen.

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A manual focus wheel on top of the Player adjusts the position of the projection lens to focus the image sharply on the screen. A frame adjust wheel minutely alters the angle of the mirror to register the moving images precisely on the screen area. A built-in eject button permits the viewer to remove a cassette during mid-projection and by attaching the remote instant replay control to the Player, a viewer may replay any scene from a Phototape instantly, adding the dimension of an "encore performance" to scenes of special interest or enjoyment.

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AWARD-WINNING CANADIAN FILMMAKER LABELS POLAVISION

"NEW MEDIUM" IN PRE-LAUNCH TEST

One of Canada's foremost filmmakers--a 17-time winner of Canadian Film Awards and recipient of more than 30 international film honors--was asked by Polaroid Corporation of Canada to shoot six Polavision Phototape cassettes one week before the new instant movie system was officially unveiled May 12.

Peter Pearson's verdict--"Polavision is an entirely new medium. My reaction to the Polavision system is very positive....I just wish I had more time to do more with it."

Mr. Pearson lauded the value in the immediacy of seeing his movies instantly after shooting and said that "I can see a lot of uses for Polavision in professional filmmaking: for location shooting--it's much better than a lot of still photos--and for mini-screen tests for hiring extras on the shooting site.

"In fact, it would be pretty handy for transferring any kind of information--for instance from here to Los Angeles--for sets, costumes, whatever."

He said that it "was fun to shoot friends and family--but it was even more fun making a coherent, meaningful movie with Polavision." He cautioned that making a story is a technique that must be learned--and planned beforehand. "To get the maximum reward from instant movies, a Phototape should be more than just a series of unrelated shots. Making a movie that tells a story is the way to get the most out of this new medium."

Mr. Pearson added that he was "impressed with skin tones in his instant movies and labelled Polavision "intriguing, fascinating--it sure is more than a gimmick."

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He said that when first approached by Polaroid Canada to try the new instant movie system 'my reaction was 'ho-hum.' But then I tried Polavision, and that changed my attitude.

"What Polaroid says is true--the 'point of no return is trying Polavision yourself.

"The whole idea is very exciting. It's probably going to stimulate interest in the entire field of movies and movie-making."

Mr. Pearson's cinematic credits include his first feature film "Paperback Hero" which, in 1973, won the Canadian Film Award for best cinematography, best editing and best rerecording. He received best director award in 1969 for "The Best Damn Fiddler from Calabogie to Kaladar" (also named "film of the year"), the ACTRA award for best original screenplay in 1977 for television's "The Insurance Man from Ingersoll" and the Canadian Film Award for best original screenplay the same year for "One Man."

Mr. Pearson has served as President of the Directors Guild of Canada, Chairman of the Council of Canadian Filmmakers, on Toronto's Arts Council and on the Advisory Board to the Secretary of State.

He lives in Mansfield, Ont.

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VIGNETTES OF LIFE - INSTANTLY

Remarks by Han van Eesteren, General Manager,
Polaroid Corporation of Canada at the "Premiere" of
Instant Motion Pictures: Polavision

May 12, 1978

These days, we display two distinct and opposing mental attitudes towards photography. On one hand, we casually, confidently and regularly shoot and pose for billions of still exposures, made with a variety of cameras ranging in functional complexity from the highly-sophisticated and awe-inspiring to the box camera. However, the mere mention of "home movies" conjures up inhibiting visions of a cumbersome craft that requires almost unattainable expertise and a nagging sense of inadequacy in comparison to the professional audio-visual art which drenches the household in televised news drama and documentaries.

It's hardly surprising. We have been pre-conditioned by the technical propaganda of eager amateur movie makers, put off by their jargon and the implied creativity of "fades," "cuts," "rushes," "sound-tracks," "edits." and "splices." Perhaps, we are deterred by the window-displayed complexities of costly filming and projection equipment, impatient at the enforced delays of impersonal and remote processing services between filming and viewing. And then there's the household disruption involved in screening "the summer vacation" efforts and embarrassment by the need to explain filmed scenes which occurred earlier than anyone in the audience remembers. It is small wonder that we wistfully revert to the simple still camera with only a passing twinge of regret that movie-making must forever remain beyond our scope.

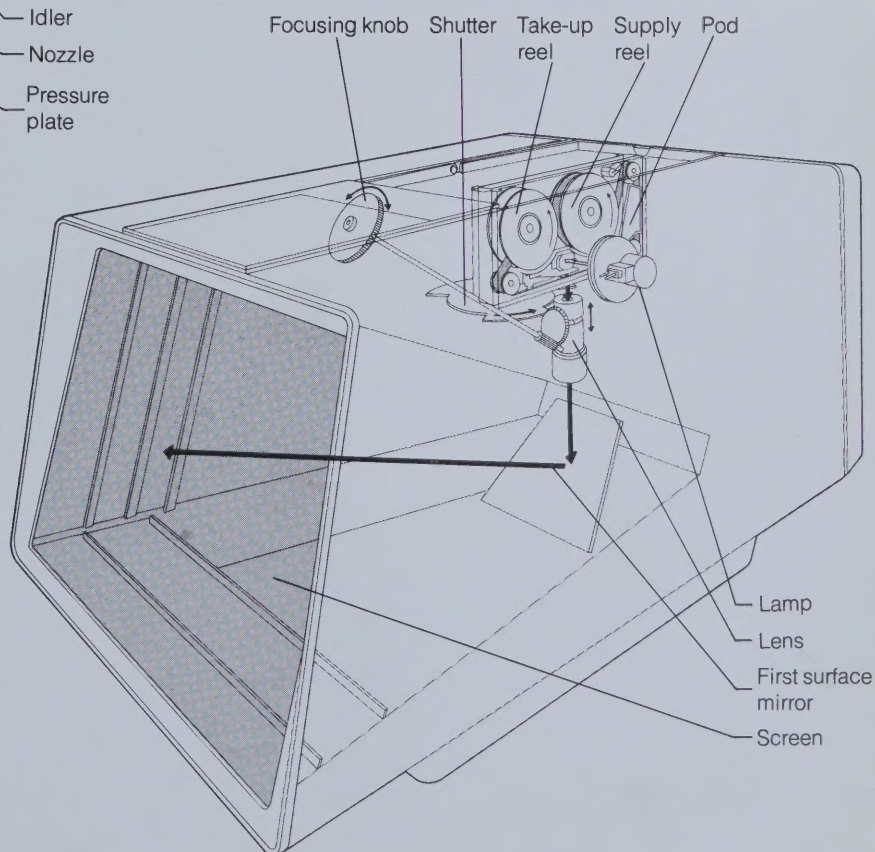
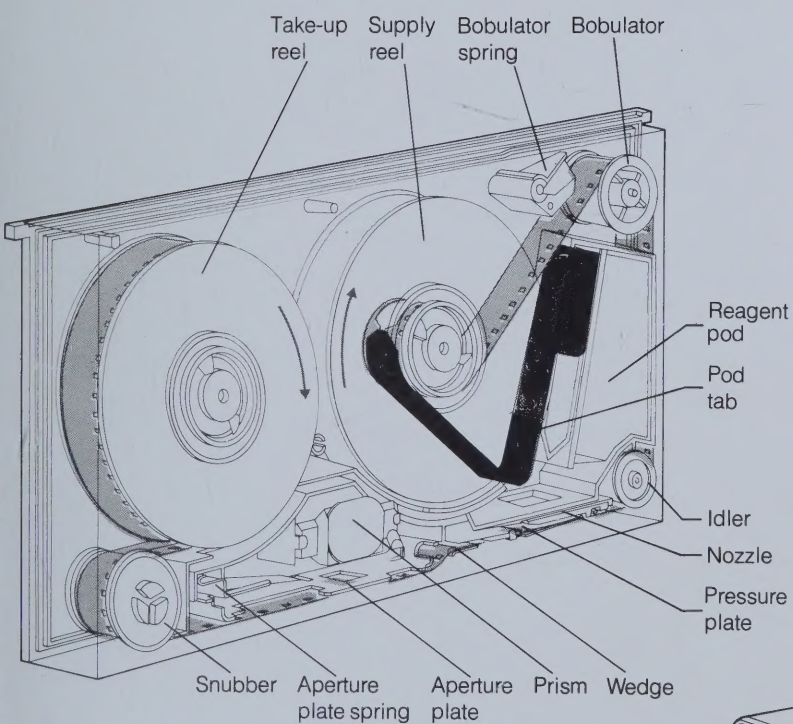
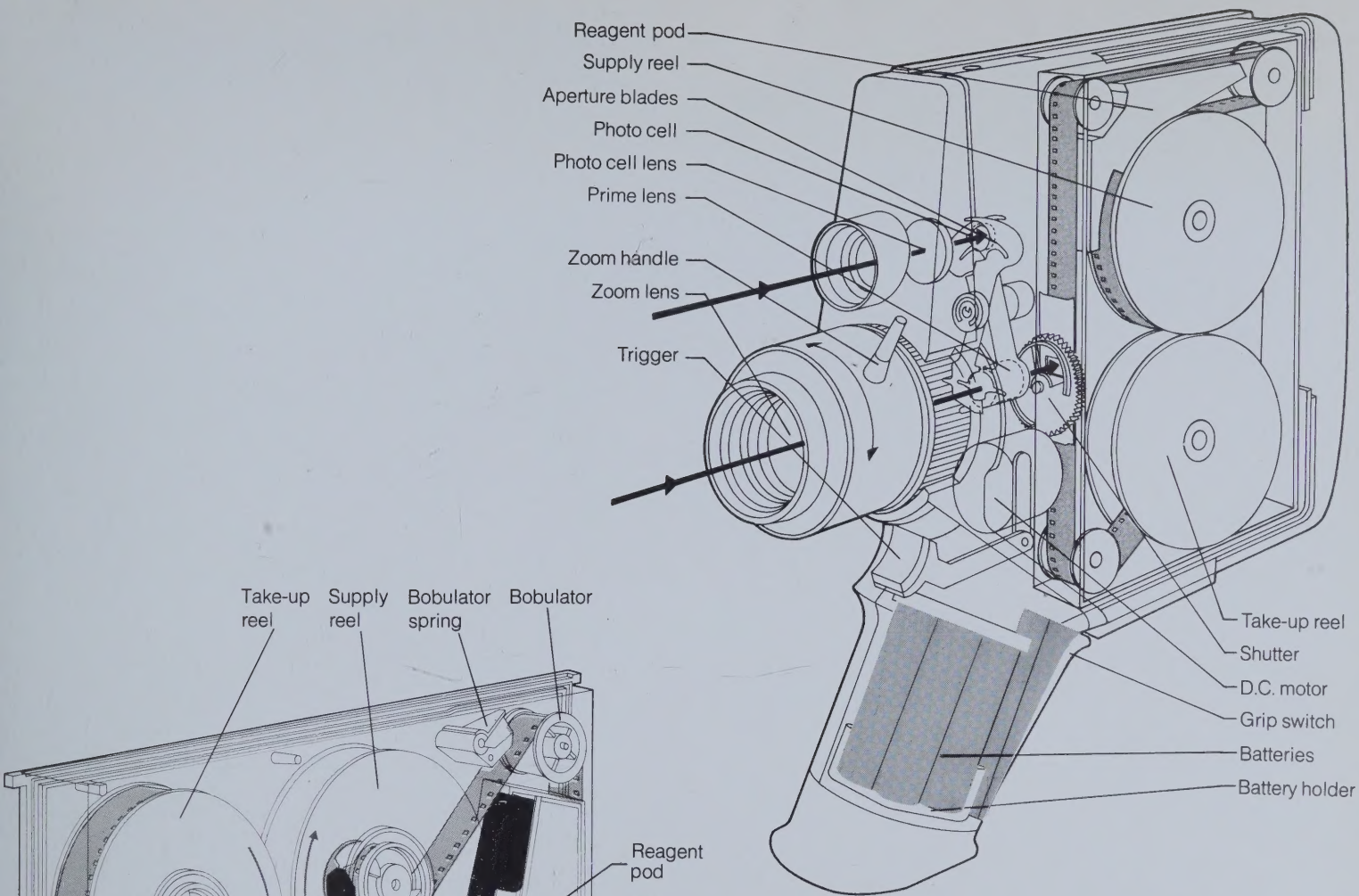
But there has been a new development in movie-making that will change all that. Conceived and designed to circumvent cinematographic complexities, to overcome creative inhibitions, the new Polavision instant movie system offers an opportunity to see ourselves and our world, in color and motion -- above all, simply -- and happily, instantly.

We can approach the new medium as a simple extension into movement of the still image with which we are so conversant. Polavision entices the aspiring movie-maker with a small but significant, first step: the simple images he would previously have frozen into static snapshots can now become a series of vivid, vignettes. Who says we have to make movies? - why not first make ultimate snapshots, memories that move?

From such small beginnings, exposed to the immediate self-criticism natural to all but the most complacent recorder of instantly-viewable slices of life, creative movie makers can grow. For the "instant" movie photographer, and his subjects, Polavision is a convenient and immediate partner in perception, permitting comparisons between fresh mental visions of a scene with the vivid, moving, permanent full-color record of its reality.

A Polavision photographer is now free from the cumbersome intricacies of conventional movie projection equipment:--free from threading, free from the screen, free from blacking out the room, and free from all the trappings of conventional cinematography. The Polavision photographer simply slips his Phototape into the table-top Player and waits just 90 seconds to enjoy the action vignettes he filmed only minutes before.

If convenience is a hallmark of the modern lifestyle, Polavision is totally of today. If the excitement and pleasure of vividly recapturing personal moving memories is a hallmark of the human condition, then Polavision is utterly universal.



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